



EXHIBIT A

Next variant

Substance Details - UN 1748				
(1) UNNo: 1748	(2) CALCIUM HYPOCHLORITE, DRY or CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 39% available chlorine (8.8% available oxygen)			
(3) Class: 5.1	(4) Subsidiary Risks: -	(4) Marine Pollutant: No	(5) Packing Group: II	(16) Stowage Category: D
(6) Special Provisions: 313 314			(7) Limited Quantities: 1 kg	
(17) Flashpoint: -		(17) Explosive limits: -		(15) Emergency Schedule: F-H,S-Q
Instructions			Provisions	
Packing	(8) P002		(9) PP85	
IBCs	(10) -		(11) -	
Tanks	(12) IMO: -	(13) UN: -	(14) -	
(16) Stowage and Segregation				
Cargo transport units shall be shaded from direct sunlight and stowed away from sources of heat. Packages in cargo transport units shall be stowed so as to allow for adequate air circulation throughout the cargo. 'Separated from' ammonium compounds, acids, cyanides, hydrogen peroxides and liquid organic substances.				
(17) Properties and Observations				
White or yellowish solid (powder, granules or tablets) with chlorine-like odour. Soluble in water. May cause fire in contact with organic material or ammonium compounds. Substances are liable to exothermic decomposition at elevated temperatures. This condition may lead to fire or explosion. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). Liable to heat slowly. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Dust irritates mucous membranes.				
Labels/Marks/Signs:				
For further information on the use of labels, marks and signs, see part 5 of the IMDG Code.				


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Previous variant

Substance Details - UN 1748				
(1) UNNo: 1748	(2) CALCIUM HYPOCHLORITE, DRY or CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 39% available chlorine (8.8% available oxygen)			
(3) Class: 5.1	(4) Subsidiary Risks: -	(4) Marine Pollutant: No	(5) Packing Group: III	(16) Stowage Category: D
(6) Special Provisions: 316			(7) Limited Quantities: 5 kg	
(17) Flashpoint: -		(17) Explosive limits: -		(15) Emergency Schedule: F-H,S-Q
	Instructions		Provisions	
Packing	(8) P002		(9) PP85	
IBCs	(10) -		(11) -	
Tanks	(12) IMO: -	(13) UN: -	(14) -	
(16) Stowage and Segregation				
Cargo transport units shall be shaded from direct sunlight and stowed away from sources of heat. Packages in cargo transport units shall be stowed so as to allow for adequate air circulation throughout the cargo. 'Separated from' ammonium compounds, acids, cyanides, hydrogen peroxides and liquid organic substances.				
(17) Properties and Observations				
White or yellowish solid (powder, granules or tablets) with chlorine-like odour. Soluble in water. May cause fire in contact with organic material or ammonium compounds. Substances are liable to exothermic decomposition at elevated temperatures. This condition may lead to fire or explosion. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). Liable to heat slowly. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Dust irritates mucous membranes.				
Labels/Marks/Signs:				
For further information on the use of labels, marks and signs, see part 5 of the IMDG Code.				


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Next variant


Substance Details - UN 2880				
(1) UNNo: 2880	(2) CALCIUM HYPOCHLORITE, HYDRATED or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE with not less than 5.5% but not more than 16% water			
(3) Class: 5.1	(4) Subsidiary Risks: -	(4) Marine Pollutant: No	(5) Packing Group: II	(16) Stowage Category: D
(6) Special Provisions: 313 314 322			(7) Limited Quantities: 1 kg	
(17) Flashpoint: -		(17) Explosive limits: -		(15) Emergency Schedule: F-H,S-Q
Instructions			Provisions	
Packing	(8) P002		(9) PP85	
IBCs	(10) -		(11) -	
Tanks	(12) IMO: -	(13) UN: -	(14) -	
(16) Stowage and Segregation				
Cargo transport units shall be shaded from direct sunlight and stowed away from sources of heat. Packages in cargo transport units shall be stowed so as to allow for adequate air circulation throughout the cargo. 'Separated from' ammonium compounds, acids, cyanides, hydrogen peroxides and liquid organic substances.				
(17) Properties and Observations				
White or yellowish solid (powder, granules or tablets) with chlorine-like odour. Soluble in water. May cause fire in contact with organic material or ammonium compounds. Substances are liable to exothermic decomposition at elevated temperatures. This condition may lead to fire or explosion. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). Liable to heat slowly. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Dust irritates mucous membranes.				
Labels/Marks/Signs:				
For further information on the use of labels, marks and signs, see part 5 of the IMDG Code.				

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Previous variant

Substance Details - UN 2880				
(1) UNNo: 2880		(2) CALCIUM HYPOCHLORITE, HYDRATED or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE with not less than 5.5% but not more than 16% water		
(3) Class: 5.1	(4) Subsidiary Risks: -	(4) Marine Pollutant: No	(5) Packing Group: III	(16) Stowage Category: D
(6) Special Provisions: 223 313 314			(7) Limited Quantities: 5 kg	
(17) Flashpoint: -		(17) Explosive limits: -		(15) Emergency Schedule: F-H,S-Q
Instructions		Provisions		
Packing	(8) P002		(9) PP85	
IBCs	(10) -		(11) -	
Tanks	(12) IMO: -	(13) UN: -	(14) -	
(16) Stowage and Segregation				
Cargo transport units shall be shaded from direct sunlight and stowed away from sources of heat. Packages in cargo transport units shall be stowed so as to allow for adequate air circulation throughout the cargo. 'Separated from' ammonium compounds, acids, cyanides, hydrogen peroxides and liquid organic substances.				
(17) Properties and Observations				
White or yellowish solid (powder, granules or tablets) with chlorine-like odour. Soluble in water. May cause fire in contact with organic material or ammonium compounds. Substances are liable to exothermic decomposition at elevated temperatures. This condition may lead to fire or explosion. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). Liable to heat slowly. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Dust irritates mucous membranes.				
Labels/Marks/Signs:				
For further information on the use of labels, marks and signs, see part 5 of the IMDG Code.				

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Substance Details - UN 2208				
(1) UNNo: 2208	(2) CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 10% but not more than 39% available chlorine			
(3) Class: 5.1	(4) Subsidiary Risks: -	(4) Marine Pollutant: No	(5) Packing Group: III	(16) Stowage Category: D
(6) Special Provisions: 313 314			(7) Limited Quantities: 5 kg	
(17) Flashpoint: -		(17) Explosive limits: -		(15) Emergency Schedule: F-H,S-Q
Instructions		Provisions		
Packing	(8) P002		(9) PP85	
IBCs	(10) -		(11) -	
Tanks	(12) IMO: -	(13) UN: -	(14) -	
(16) Stowage and Segregation				
Cargo transport units shall be shaded from direct sunlight and stowed away from sources of heat. Packages in cargo transport units shall be stowed so as to allow for adequate air circulation throughout the cargo. 'Separated from' ammonium compounds, acids, cyanides, hydrogen peroxides and liquid organic substances.				
(17) Properties and Observations				
White or yellowish solid (powder, granules or tablets) with chlorine-like odour. Soluble in water. May cause fire in contact with organic material or ammonium compounds. Substances are liable to exothermic decomposition at elevated temperatures. This condition may lead to fire or explosion. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). Liable to heat slowly. Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas. In the presence of moisture, corrosive to most metals. Dust irritates mucous membranes.				
Labels/Marks/Signs: For further information on the use of labels, marks and signs, see part 5 of the IMDG Code.				

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Packing Instructions & Provisions for UN 2208
CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 10% but not more than 39%
available chlorine

P002 PACKING INSTRUCTION (SOLIDS)					
The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:					
Combination packagings		Maximum net mass (see 4.1.3.3)			
Inner packagings		Outer packagings	Packing group I	Packing group II	Packing group III
Glass	10 kg	Drums steel (1A2) aluminium (1B2) other metal (1N2) plastics (1H2) plywood (1D) fibre (1G)	125 kg	400 kg	400 kg
Plastics ¹	30 kg		125 kg	400 kg	400 kg
Metal	40 kg		125 kg	400 kg	400 kg
Paper ^{1,2,3}	50 kg		125 kg	400 kg	400 kg
Fibre ^{1,2,3}	50 kg		125 kg	400 kg	400 kg
¹ These inner packagings shall be sift-proof. ² These inner packagings shall not be used when the substances being transported may become liquid during transport. ³ Paper and fibre inner packagings shall not be used for substances of packing group I.		Boxes steel (4A) aluminium (4B) natural wood (4C1) natural wood with sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) expanded plastics (4H1) solid plastics (4H2)	125 kg	400 kg	400 kg
			125 kg	400 kg	400 kg
			125 kg	400 kg	400 kg
			250 kg	400 kg	400 kg
			125 kg	400 kg	400 kg
		125 kg	400 kg	400 kg	
		75 kg	400 kg	400 kg	
		40 kg	60 kg	60 kg	
		125 kg	400 kg	400 kg	
		Jerricans steel (3A2) aluminium (3B2) plastics (3H2)		75 kg	120 kg
75 kg	120 kg			120 kg	
75 kg	120 kg			120 kg	
Single packagings					
Drums					
steel (1A1 or 1A2 ⁴)			400 kg	400 kg	400 kg
aluminium (1B1 or 1B2 ⁴)			400 kg	400 kg	400 kg
metal, other than steel or aluminium (1N1 or 1N2 ⁴)			400 kg	400 kg	400 kg
plastics (1H1 or 1H2 ⁴)			400 kg	400 kg	400 kg
fibre (1G ⁵)			400 kg	400 kg	400 kg
plywood (1D ⁵)			400 kg	400 kg	400 kg
Jerricans					
steel (3A1 or 3A2 ⁴)			120 kg	120 kg	120 kg
aluminium (3B1 or 3B2 ⁴)			120 kg	120 kg	120 kg
plastics (3H1 or 3H2 ⁴)			120 kg	120 kg	120 kg
Boxes					
steel (4A) ⁵			Not allowed	400 kg	400 kg
aluminium (4B) ⁵			Not allowed	400 kg	400 kg
natural wood (4C1) ⁵			Not allowed	400 kg	400 kg
natural wood with sift-proof walls (4C2) ⁵			Not allowed	400 kg	400 kg
plywood (4D) ⁵			Not allowed	400 kg	400 kg
reconstituted wood (4F) ⁵			Not allowed	400 kg	400 kg
fibreboard (4G) ⁵			Not allowed	400 kg	400 kg
solid plastics (4H2) ⁵			Not allowed	400 kg	400 kg

¹ These inner packagings shall be sift-proof.

² These inner packagings shall not be used when the substances being transported may become liquid during transport.

³ Paper and fibre inner packagings shall not be used for substances of packing group I.

Bags			
bags (5H3, 5H4, 5L3, 5M2) ⁵	Not allowed	50 kg	50 kg
Composite packagings			
Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met.			
plastics receptacle in steel, aluminium, plywood, fibre or plastics drum (6HA1, 6HB1, 6HG1 ⁵ , 6HD1 ⁵ or 6HH1)	400 kg	400 kg	400 kg
plastics receptacle in steel or aluminium crate or box, wooden box, plywood box, fibreboard box or solid plastics box (6HA2, 6HB2, 6HC, 6HD2 ⁵ , 6HG2 ⁵ or 6HH2)	75 kg	75 kg	75 kg
glass receptacle in steel, aluminium, plywood or fibre drum (6PA1, 6PB1, 6PD1 ⁵ or 6PG1 ⁵) or in steel, aluminium, wood, or fibreboard box or in wickerwork hamper (6PA2, 6PB2, 6PC, 6PG2 ⁵ or 6PD2 ⁵) or in solid or expanded plastics packaging (6PH2 or 6PH1 ⁵)	75 kg	75 kg	75 kg
⁴ These packagings shall not be used for substances of packing group I that may become liquid during transport (see 4.1.3.4). ⁵ These packagings shall not be used when the substances being transported may become liquid during transport (see 4.1.3.4).			

Special packing provisions:	
PP85	Bags are not allowed.

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FIRE SCHEDULE Hotel

F - H

OXIDIZING SUBSTANCES WITH EXPLOSIVE POTENTIAL

General comments		In a fire, exposed cargoes may explode or their containment may rupture. Crew members should be aware of the explosion hazard and take appropriate action. Fight fire from a protected position from as far away as possible. SUDDEN OR SHORT-TERM EVENTS (E.G. EXPLOSIONS) MAY ENDANGER THE SAFETY OF THE SHIP.
Cargo on fire on deck	Packages	Create water spray from as many hoses as possible.
	Cargo Transport Units	
Cargo on fire under deck		OPEN HATCHES to provide maximum ventilation. Fixed gas fire-extinguishing systems may not be effective on these fires. Create water-spray from as many hoses as possible.
Cargo exposed to fire		Do not move packages that have been exposed to heat. If practicable, remove or jettison packages which are likely to be involved in the fire. If the packages are not directly involved in the fire, efforts should be concentrated on preventing the fire from reaching the cargo. This is done by keeping the packages wet by using water jets from as far away as practicable to drive the fire away. If the fire reaches the cargo, the fire-fighters should withdraw to a safe area and continue to fight the fire from a safe position. Where practicable, articles having been exposed to the fire should be kept separated from unexposed articles. They should be kept wet and monitored from a safe distance.
Special cases: None.		

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SPILLAGE SCHEDULE Quebec

S - Q
OXIDIZING SUBSTANCES

General comments		Wear suitable protective clothing and self-contained breathing apparatus. Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools, friction). Wear non-sparking footwear. May ignite combustible material (e.g. wood, paper, clothing). Stop leak if practicable.
Spillage on deck	Packages (small spillage)	Wash overboard with copious quantities of water. Keep clear of effluent.
	Cargo Transport Units (large spillage)	
Spillage under deck	Packages (small spillage)	Do not enter space without self-contained breathing apparatus. <i>If dry</i> , contain and collect spillage if practicable. Dispose of overboard. <i>If wet</i> , use inert absorbent material. Do not use combustible material. <i>If liquid</i> , wash down to the bottom of the hold using copious quantities of water. Pump overboard. Dispose of overboard.
	Cargo Transport Units (large spillage)	Provide adequate ventilation. Do not enter space without self-contained breathing apparatus. <i>If dry</i> , contain and collect spillage if practicable. Dispose of overboard. <i>If wet</i> , use inert absorbent material. Do not use combustible material. <i>If liquid</i> , wash down to the bottom of the hold using copious quantities of water. Pump overboard. Dispose of overboard.
Special cases: None.		

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Special Provisions for UN 2208**CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 10% but not more than 39% available chlorine**

313	Substances and mixtures meeting the criteria for class 8 shall be labelled with a 'CORROSIVE' subsidiary risk label (Model No. 8, see 5.2.2.2.2).
314	a) These substances are liable to exothermic decomposition at elevated temperatures. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds). b) During the course of transport, these substances shall be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas.

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Chapter 3.2

DANGEROUS GOODS LIST

3.2.1 Structure of the Dangerous Goods List

The Dangerous Goods List is divided into 18 columns as follows:

When a code is not provided, it means the substance is not authorized in IBC.

- Column 1 **UN No.** - this column contains the United Nations Number assigned to a dangerous good by the United Nations Committee of Experts on the Transport of Dangerous Goods (UN List).
- Column 2 **Proper Shipping Name (PSN)** - this column contains the Proper Shipping Names in upper-case characters, which may have to be followed by additional descriptive text in lower-case characters (see 3.1.2). Proper Shipping Names may be shown in plural where isomers of similar classification exist. Hydrates may be included under the Proper Shipping Name for the anhydrous substances. Unless otherwise indicated for an entry in the Dangerous Goods List, the word "SOLUTION" in a Proper Shipping Name means one or more named dangerous goods dissolved in a liquid that is not otherwise subject to this Code. When a flashpoint is mentioned in this column, the data is based on closed-cup (c.c) methods.
- Column 3 **Class or division** - this column contains the class and, in the case of class 1, the division and the compatibility group assigned to the substance or article according to the classification system described in part 2, chapter 2.1.
- Column 4 **Subsidiary risk(s)** - this column contains the class number(s) of any subsidiary risk(s) which have been identified by applying the classification system described in part 2. This column also identifies a dangerous good as a marine pollutant or a severe marine pollutant as follows:

P - Marine pollutant

PP - Severe marine pollutant

● - Marine pollutant only when containing 10% or more substance(s) identified with 'P' or 1% or more substance(s) identified with 'PP' in this column or in the Index

- Column 5 **Packing group** - this column contains the packing group number (i.e. I, II or III) where assigned to the substance or article. If more than one packing group is indicated for the entry, the packing group of the substance or formulation to be transported shall be determined, based on its properties, through application of the hazard grouping criteria as provided in part 2.
- Column 6 **Special provisions** - this column contains a number referring to any special provision(s) indicated in chapter 3.3 that is relevant to the substance or article. Special provisions apply to all packing groups permitted for a particular substance or article unless the wording makes it otherwise apparent. The special provision numbers specific to the sea mode start from 900.

Note: When a special provision is no longer needed, this special provision is deleted but the special provision number is not allocated again, in order not to confuse the users of this Code. For this reason, some of the numbers are missing.

- Column 7 **Limited quantities** - this column provides the maximum quantity per inner packaging or article authorized for transport of the substance or article concerned according to the provisions for limited quantities in chapter 3.4 (for Marine Pollutants, see also 3.4.8). The word "None" in this column means that the substance or article is not permitted to be transported under the provisions of chapter 3.4.

- Column 8 **Packing instructions** - this column contains alpha-numeric codes which refer to the relevant packing instruction(s) in 4.1.4. The packing instructions indicate the packagings (including large packagings) which may be used for the transport of substances and articles.

A code including the letter "P" refers to packing instructions for the use of packagings described in chapter 6.1, 6.2 or 6.3.

A code including the letters "LP" refers to packing instructions for the use of large packagings described in chapter 6.6.

When a code including the letter(s) "P" or "LP" is not provided, it means that the substance is not

allowed in that type of packaging.

Column 9 **Special packing provisions** - this column contains alpha-numeric codes which refer to the relevant special packing provisions specified in 4.1.4. The special packing provisions indicate the packagings (including large packagings).

A special packing provision including the letters "PP" refers to a special packing provision applicable to the use of a packing instruction bearing the Code "P" in 4.1.4.1.

A special packing provision including the letter "L" refers to a special packing provision applicable to a packing instruction bearing the code "LP" in 4.1.4.3.

Column 10 **IBC packing instructions** - this column contains alpha-numeric codes that refer to the relevant IBC instruction, which indicates the type of IBC that shall be used for the transport of the substance under reference. A code including the letters "IBC" refers to packing instructions for the use of IBCs described in chapter 6.5.

Column 11 **IBC special provisions** - this column contains an alpha-numeric code, including the letter "B", which refers to special packing provisions applicable to the use of packing instructions bearing the code "IBC" in 4.1.4.2.

Column 12 **IMO Tank instructions** - this column only applies to IMO portable tanks and road tank vehicles constructed in accordance with the requirements of Amendment 29 of the Code consistent with the transitional provision in 4.2.0. The provisions of this column may be used instead of the provisions of column 13 until 2010. This column contains T codes (see 4.2.5.2.6) and in some instances TP notes (see 4.2.5.3). When no T code is provided in this column, the T code provided in column 13 shall apply.

Column 13 **UN tank and Bulk container instructions** - this column contains T codes (see 4.2.5.2.6) applicable to the transport of dangerous goods in portable tanks and road tank vehicles.

When a T code is not provided in this column, it means that the dangerous goods are not authorized for transport in tanks unless specifically approved by the competent authority.

Bulk container code - The code "BK2" refers to closed bulk containers used for the transport of bulk goods described in chapter 6.9. When a bulk container code is not provided, it means that the substance is not permitted in a bulk container. Transport in sheeted bulk containers is not permitted in this Code.

The gases authorized for transport in MEGCs are indicated in the column "MEGC" in Tables 1 and 2 of packing instruction P200 in 4.1.4.1.

Column 14 **Tank special provisions** - this column contains TP notes (see 4.2.5.3) applicable to the transport of dangerous goods in portable tanks and road tank vehicles. The TP notes specified in this column apply to the portable tanks specified in both columns 12 and 13.

Column 15 **EmS** - this column refers to the relevant emergency schedules for FIRE and SPILLAGE in the "The EmS Guide - Emergency Response Procedures for Ships Carrying Dangerous Goods".

The first EmS code refers to the relevant Fire Schedule (e.g. Fire Schedule Alfa "F-A" General Fire Schedule).

The second EmS code refers to the relevant Spillage Schedule (e.g. Spillage Schedule Alfa "S-A" Toxic Substances).

Underlined EmS codes (special cases) indicate a substance, material or article for which additional advice is given in the emergency response procedures.

For dangerous goods offered for transport under N.O.S. entries or other generic entries, the most relevant emergency response procedures may vary with the properties of the hazardous constituents. As a consequence, shippers may have to declare different EmS codes from those indicated, if, to their knowledge, such codes are more appropriate.

The provisions in this column are not mandatory.

Column 16 **Stowage and segregation** - this column contains the stowage and segregation provisions as prescribed in part 7.

Column 17 **Properties and Observations** - this column contains properties of and observations on the

dangerous goods listed. The provisions in this column are not mandatory.

Properties of most gases include an indication of its density in relation to air. The figures in brackets give the density relative to air.

- .1 "lighter than air" when the vapour density is down to half that of air;
- .2 "much lighter than air" when the vapour density is less than half that of air;
- .3 "heavier than air" when the vapour density is up to twice that of air; and
- .4 "much heavier than air" when the vapour density is more than twice that of air.

When explosive limits are given, these refer to the volume percentage of the vapour of the substance when mixed with air.

The ease and extent to which different liquids mix with water varies greatly and most entries have included an indication of miscibility. In these cases "miscible with water" normally means capable of being mixed with water in all proportions to form a completely homogeneous liquid.

Column 18 **UN No.** see column 1.

3.2.2 Abbreviations and symbols

The following abbreviations and symbols are used in the Dangerous Goods List and have the meanings shown:

Abbreviation/Symbol	Column	Meaning
N.O.S.	2	Not otherwise specified
☉	4	Can be a marine pollutant or a severe marine pollutant
P	4	Marine pollutant
PP	4	Severe marine pollutant